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Issued January 19, 1907.

United States Department of Agriculture,

FOREST SERVICE—Circular 72.

GIFFORD PINCHOT, Forester.

FOREST PLANTING LEAFLET.

WESTERN YELLOW PINE (Pinus ponderosa).

FORM AND SIZE.

The western yellow pine is one of the largest and most valuable of the pines. It ranges in size from not more than 60 feet high in the arid portions of its range to 200 feet in height and 6 feet in diameter on the western slopes of the Sierras. It has a straight and symmetrical stem and usually a long, spire-like crown, which, even in fairly dense stands, covers from one-half to one-third of the tree. The needles are from 6 to 10 inches long and usually grow in bundles of three.

RANGE.

The natural range of western yellow pine is throughout the United States west of the one hundredth meridian. It is most common in the Rocky Mountain and Pacific Coast ranges at medium altitudes.

The tree may be planted anywhere within its natural range and, in favorable situations, several degrees farther east. It is particularly well suited for planting in the sand-hill regions of western Nebraska and Kansas and on denuded watersheds in the Rocky Mountains and Pacific Coast regions below an elevation of 6,000 feet.

SILVICAL QUALITIES.

Western yellow pine is a very hardy tree and will endure great diversities of soil and climate. It is especially suitable for planting in dry regions where droughts are not too prolonged.

The conditions under which it usually grows prevent the tree from making a rapid growth. In the most favorable situations, however, its growth is fairly rapid.

Western yellow pine has suffered greatly from the attacks of bark beetles. The trees are usually attacked during August and September and die by the following spring. If a plantation is attacked by these insects, specimens, with description of the damage, should be sent to the Bureau of Entomology, Department of Agriculture.

Because of their long and heavy foliage, the young trees are sometimes borne down by deep snows.

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ECONOMIC USES.

The wood, which is light, strong, dense, and moderately durable, is the most valuable one of the Rocky Mountains and the most extensively used. Because of its dense foliage and ability to grow in close stands, the tree forms an excellent watershed cover.

PROPAGATION.

Western yellow pine reproduces only from seed. Natural reproduction is abundant wherever there are old trees. The cones ripen in the fall of the second year, and the seeds can be kept over winter in any dry, cool place, and can be preserved several years with only a moderate loss of vitality.

Like most pines, the tree has a strong taproot, which in most situations penetrates to a considerable depth.

PLANTING.

In planting western yellow pine it is best to use trees from 2 to 3 years old which have been raised in nursery beds from seed planted in early spring. Because of the tendency to develop a long taproot it is necessary to transplant the seedlings in the spring when 1 year old to nursery rows, or to root prune them in the beds. This last plan is more economical and is advisable where a large number of seedlings are grown.

The young trees should be set out in their permanent places in April or early in May. They may be planted either in furrows or in holes made with a spade or mattock. As a rule the trees should be spaced from 5 to 6 feet apart each way. If success is to be attained, great care is necessary in protecting the roots from the air and in packing the soil down firmly around them.

It is usually best to plant western yellow pine in pure stands.

Additional details as to planting can be found in the planting leaflets, How to Transplant Forest Trees and How to Pack and Ship Young Trees.

CULTIVATION AND CARE.

In many localities of the West where western yellow pine is planted, cultivation until the trees are thoroughly established will be very beneficial. Fire and stock should be kept out of the plantation, and it should be allowed to assume the character of a forest as soon as possible. Further information can be found in the planting leaflet on How to Cultivate and Care for Forest Plantations on the Semiarid Plains.

Approved.

JAMES WILSON,
Secretary,

WASHINGTON, D. C., *November 24, 1906.*

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